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## **Charge-Transfer Complexation for Spectrophotometric Assay of Certain Imidazole Antifungal Drugs**

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### **Abstract**

A spectrophotometric method is described for the assay of some antifungal agents containing an imidazole ring: clotrimazole, econazole, ketoconazole and miconazole. The method is based on the formation of a charge-transfer complex between the drug as n-electron donor and iodine as  $\sigma$ -acceptor. The product exhibited two absorption maxima at 290 and 377 nm; measurements are made at 290 nm. Beer's law is obeyed in a concentration range of 1-40  $\mu\text{g/ml}$ . The method is rapid, simple and sensitive and can be applied to the analysis of some commercial dosage forms without interference. A detailed investigation of the formed complex was made with respect to its composition, association constant and free energy change.

**Keywords:** Antifungal drugs; imidazole ring; charge transfer; spectrophotometry